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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/854,807	05/14/2001	Fujio Tanaka	1217-010754	8883

7590 03/18/2003

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EXAMINER

CINTINS, IVARS C

ART UNIT

PAPER NUMBER

1724

DATE MAILED: 03/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/854,807

Applicant(s)
Tanaka et al.

Examiner
Ivars Cintins

Art Unit
1724



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Mar 4, 2003
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other: _____

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamilton et al. (U.S. Patent No. 3,711,401) in view of Kozak et al. (U.S. Patent No. 5,393,416), further in view of Kunin et al. (U.S. Patent No. 6,340,712). Hamilton et al. discloses regenerating an ion exchange resin with a downward flow of regenerant solution and subsequently rinsing this resin to remove any remaining regenerant (see col. 5, lines 4-5). Accordingly, this primary reference discloses the claimed invention with the exception of the use of ultra-pure water to rinse the regenerated resin, the flow direction of water in this rinsing step, and the flow rate of regenerant and water (claim 2). Kozak et al. teaches (see col. 17, lines 19-29) rinsing an ion exchange resin column with deionized water in an upward direction, in order to remove foreign particles which could cause plugging of the column over a number of cycles. It would have been obvious to one of ordinary skill in the art at the time the

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invention was made to rinse the regenerated resin of Hamilton et al. in an upward direction, in order to obtain the advantages disclosed by Kozak et al. for this primary reference system. Also, Kunin et al. teaches rinsing an ion exchange resin with ultra-pure water (col. 6, lines 2-3); and it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the ultra-pure water of Kunin et al. to rinse the regenerated resins of the modified primary reference, in order to minimize contamination of these resins. The exact flow rate of regenerant and rinsing water employed are not seen to materially affect the overall results of the modified primary reference process, or to produce any new and unexpected results; and are therefore deemed to be obvious matters of choice, which are insufficient to patentably distinguish claim 2.

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamilton et al., Kozak et al. and Kunin et al. as applied above, and further in view of Saieva (U.S. Patent No. 4,652,352). The modified primary reference discloses the claimed invention with the exception of the specific material from which the processing equipment is constructed. Saieva discloses (see col. 5, line 33) employing an ion exchange resin column constructed from a vinyl chloride resin (i.e. PVC); and it would have been obvious to one of ordinary skill in the art at the time

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the invention was made to construct the column and other parts of the modified primary reference system from such a vinyl chloride resin, in order to obtain the advantages associated with this material (e.g. non-corrosive environment, lower construction costs, etc.) for the system of the modified primary reference.

Applicant's arguments filed March 4, 2004 have been noted and carefully considered but no longer appear to be relevant in view of the new grounds of rejection. Applicant should note, however, that the claims do not preclude a service cycle between individual regeneration and ultra-pure water rinsing treatments, i.e. due to the "comprising" language in the first line of claim 1; and therefore, these claims do not distinguish over the alternating service and regeneration cycles of Hamilton et al. In any event, it would have been obvious to one of ordinary skill in the art at the time the invention was made to subject the ion exchange resins of the modified primary reference to multiple regeneration and rinsing steps, between service cycles, in order to ensure that these resins are adequately regenerated and rinsing prior to their use in these service cycles.

Wachsmuth (U.S. Patent No. 3,989,624) discloses that it is known to regenerate and/or rinse ion exchange resins in either an upflow or a downflow direction (see col. 9, lines 31-34).

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to I. Cintins whose telephone number is (703) 308-3840. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM.

The fax phone numbers for this art unit are: (703) 872-9311 for "Official" faxes after Final Rejection; (703) 872-9310 for all other "Official" faxes; and (703) 872-9492 for "Draft" and other "Unofficial" faxes.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.

I. Cintins
March 13, 2003


Ivars C. Cintins
Primary Examiner
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